Applicant(s):Sandhu et al.

Serial No. Unknown (Parent Serial No. 10/087,535)

Filed: Herewith (Parent: February 27, 2002)

For: METHODS FOR USE IN FORMING A CAPACITOR AND STRUCTURES RESULTING FROM SAME

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the aboveidentified application:

Listing of Claims

1-38. Cancelled

39. (Original) A method for use in forming an integrated circuit structure, the method comprising:

forming a capacitor structure, wherein the capacitor structure comprises a first conductive material, a second conductive material, and a dielectric material between at least portions of the first and second conductive material, wherein the dielectric material comprises an initial oxygen concentration upon formation thereof;

forming an excess oxygen containing material on at least a portion of the second conductive material, wherein forming the excess oxygen containing material comprises reacting TEOS with ozone; and

subjecting the capacitor structure and the excess oxygen containing material to thermal cycling during one or more fabrication processes, wherein the excess oxygen containing material provides oxygen atoms during the thermal cycling to the dielectric material such that oxygen reduction in the dielectric material due to the thermal cycling is reduced.

- 40. **(Original)** The method of claim 39, wherein the initial oxygen concentration of the dielectric material is substantially maintained during the thermal cycling.
- 41. **(Original)** The method of claim 39, wherein the one or more fabrication processes comprise formation of one or more post capacitor formation layers.

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42. **(Original)** The method of claim 41, wherein the one or more post capacitor formation layers comprise at least one of a layer of another capacitor structure, a layer of an interconnect structure, an insulating layer, and a wafer coating.

- 43. (Original) The method of claim 39, wherein the one or more fabrication processes comprise a thermal annealing process.
- 44. **(Original)** The method of claim 39, wherein the one or more fabrication processes comprise an alloying process in an atmosphere comprising hydrogen.
- 45. **(Original)** The method of claim 39, wherein the excess oxygen containing material comprises an ozone enhanced tetraethylorthosilicate material.
- 46. **(Original)** The method of claim 39, wherein the excess oxygen containing material comprises a doped ozone enhanced tetraethylorthosilicate material.
- 47. (Original) The method of claim 46, wherein the doped ozone enhanced tetraethylorthosilicate material is doped with boron and phosphorous in a concentration ranging from 0 percent to about 5 percent boron and 0 percent to about 8 percent phosphorous.
- 48. (Original) The method of claim 39, wherein the capacitor is formed as a part of a memory device.
- 49. **(Original)** The method of claim 39, wherein an oxygen concentration of the excess oxygen containing material is about 0.01 percent to about 10 percent greater than a material formed using TEOS without reaction with ozone.

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50. (Original) The method of claim 39, wherein the dielectric material is a dielectric material having a dielectric constant of about 10 or greater.

51. (Original) A method for use in forming an integrated circuit structure, the method comprising:

forming a capacitor structure, wherein the capacitor structure comprises a first conductive material, a second conductive material, and a dielectric material between at least portions of the first and second conductive material, wherein the dielectric material comprises an initial oxygen concentration upon formation thereof;

forming an ozone enhanced oxide material on at least a portion of the second conductive material; and

subjecting the capacitor structure and the ozone enhanced oxide material to thermal cycling during one or more fabrication processes, wherein the ozone enhanced oxide material provides oxygen atoms during the thermal cycling to the dielectric material such that the initial oxygen concentration of the dielectric material is substantially maintained during the thermal cycling.

- 52. (Original) The method of claim 51, wherein the one or more fabrication processes comprise formation of one or more post capacitor formation layers.
- 53. (**Original**) The method of claim 51, wherein the one or more fabrication processes comprise a thermal annealing process.
- 54. **(Original)** The method of claim 51, wherein the one or more fabrication processes comprise an alloying process in an atmosphere comprising hydrogen.
- 55. (Original) The method of claim 51, wherein the ozone enhanced oxide material comprises a doped ozone enhanced oxide material.

Preliminary Amendment

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56. (Original) The method of claim 51, wherein the ozone enhanced oxide material comprises an ozone enhanced tetraethylorthosilicate material.

- 57. (Original) The method of claim 56, wherein the ozone enhanced oxide material comprises a doped ozone enhanced tetraethylorthosilicate material.
- 58. (Original) The method of claim 57, wherein the doped ozone enhanced tetraethylorthosilicate material is doped with boron and phosphorous in a concentration ranging from 0 percent to about 5 percent boron and 0 percent to about 8 percent phosphorous.
- 59. **(Original)** The method of claim 51, wherein the dielectric material is a dielectric material having a dielectric constant of about 10 or greater.
- 60. (Original) The method of claim 51, wherein the capacitor is formed as a part of a memory device.